

Pumping Up: CCRL Expands Again

By Virginia Wilkinson

Regina's Consumers' Co-operative Refinery Limited (CCRL) is growing at such a rapid pace that, just six years after its last expansion, it's expanding again.

This \$1.9 billion expansion project is the most financially significant project in Regina's history. It is the largest refinery expansion currently underway in North America and it comes at a time when most other upgrading and expansion plans in the west have been shelved.

Regina Regional Economic Development Authority President and CEO Larry Hiles is excited about the project and

believes it will provide a range of significant benefits to the city.

"Every time you hear of a major investment by a company, that's a positive indicator for the business community. It helps to provide additional brand strength to Regina as a place where things are happening," Hiles said.

Today, CCRL has the ability to process two different types of crude oil. The expansion will allow the refinery to process a third type of crude, enabling it to use a range of different feed-stocks.

As a result of the expansion, CCRL's processing capacity is projected to rise from 100,000 barrels per day to 130,000, and eventually up to 145,000 barrels per day.

While the expansion will position CCRL as an industry leader, CCRL Senior Vice President of Refining Bud Van Iderstine said this is only a side benefit to the organization.

"We are making our mark in the industry, but that was never a goal. Our mission is to serve our member co-ops. The expansion is being driven entirely

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Bud Van Iderstine, CCRL Senior Vice President of Refining

Partnerships Lend a Hand for Prospering Potash

By Darrell Noakes

Saskatchewan's potash industry continues to flourish—and the commodity's success rests not only on the work of the potash companies, but also on the expertise of industry partners working together.

AMEC, a UK-based international firm that provides engineering, project management and consultancy services, is one such partner. It operates in more than 30 countries, employing over 22,000 people worldwide. The 400-employee-strong Saskatoon group of AMEC's Natural Resources division is considered a world leader in potash and uranium mine development.

"Because of the growth of mining in Saskatchewan, we have grown significantly over the last few years," says Will Brandsema, vice president and general manager in Saskatoon.

"Traditionally, our base has been potash and uranium, but we do work in gold, other base metals, copper and zinc," says Doug Shaw, manager of project services. "We've done oil and gas, rural gas distribution systems, forestry—but right now potash is the big play."

"We have a long history in the local mining industry," he adds. "One of our predecessor companies was Cambrian Engineering, which started here in Saskatoon [over] 40 years ago... we have employees here in this office who have over 35 years with the company."

"Over the last decade or so, we have had a strong focus on the potash industry and we have worked hard to bring in some key people with potash expertise," Brandsema

"With everything that has happened in the world recently, we are fortunate that the potash expansion projects are continuing."

- Doug Shaw

says. "We've built a group here in Saskatoon that is unique in capability."

AMEC has consulted on just about every property in Canada, in addition to potash deposits around the world, all from the Saskatoon office.

Most notably, AMEC has been instrumental in Saskatchewan potash mine expansion.

Since 2003, the company completed expansions at PotashCorp's Rocanville, Allan and Lanigan facilities. PotashCorp announced that these expansions involved total investments of \$750 million, resulting in 2.65 million tonnes more production.

Following these projects, AMEC is providing engineering and project management services at PotashCorp's three most recently announced expansions: Cory and Rocanville in Saskatchewan and Picadilly in New Brunswick, a total investment of more than \$5.5 billion, capable of increasing production by 6.1 million tonnes.



PotashCorp's Cory mine

"With this workload we have really been able to strengthen AMEC in Saskatoon," says Brandsema.

"We have been able to build up a much stronger group here in all areas of process, engineering and project services," he says. "We've gone to a much higher level of capabilities here in Saskatoon, because of the work that is available."

The mining companies are positive about the potash market in the long term. We have a tremendous opportunity to service that from here. This will always be a center of technology for potash and uranium because of the strength of the local resources."

"AMEC is a leading service provider to the mining industry in Canada," says Shaw. "With everything that has happened in the world recently, we are fortunate that the potash expansion projects are continuing."

"As a company, we're positioned as well as anybody with this upswing in the potash market," he adds. "While other commodities have suffered, with projects curtailed or cancelled, potash remains strong." ❧

If You Build It, They Will Come

By Elaine Carlson

Last year, 20 per cent of the entire population of the United States and Canada visited www.gasbuddy.com—a website developed and maintained by two Regina residents, Jason Toews and Dustin Coupal.

What started as a public service is now an enormously successful business featured regularly in media such as the Wall Street Journal, Washington Post, New York Times, Good Morning America, NBC Nightly News, and CNN among others.

"I wouldn't have dreamed that the media spotlight would be so focused on us," says Toews, still a bit incredulously, "but all this media attention is good because it promotes the website and makes it more useful to consumers."

GasBuddy.com is a network of 181 local gas price websites started by Toews and Coupal—like www.ReginaGasPrices.com—where consumers in cities all across North America can find where to fill their tanks at the best price. The number of website hits is outstanding—upwards of 10 million a day during peak driving months. And it all started because a couple of guys who grew up together in Sedley and remained good friends throughout college thought they could help people save money at the pumps.

After their work and studies took Toews and Coupal out of the province, they noticed that, unlike Regina, gas prices in larger centres varied considerably. Sensing an opportunity, they got to work, and in June 2000, launched GasBuddy.com. It's something of a grassroots phenomenon. Consumers themselves report local gas

prices as a service to others and get their dibs in for weekly prize rewards such as free pre-paid fuel cards. Other consumers find they can save as much as eight cents a litre just by knowing where the best prices are. Another bonus was that once prices started being posted, gas companies themselves became much more competitive. From a consumer's perspective, it couldn't be better. The site quickly became a winner, and now includes trip cost calculators, fuel saving tips, weekly opinion polls, links to energy-related news, and a growing number of advertiser-sponsored links—many of which offer special deals to website users.

Since GasBuddy.com was launched, the business bursts at the seams every two years and is ready to grow yet again. "In the last nine months alone, we've hired 10 more people," says Toews. The location has been great. "As long as you have access to the Internet, it doesn't matter where you are. We've found that there are plenty of talented Internet developers in Regina. Being here also enables us to be

more agile and to accomplish more on the same budget than we would if we were in Silicon Valley."

Prospects for the future look excellent. "At a time when other websites are cutting back because of the recession, we're doing our best to be really innovative, with prospects that include expansion into other websites and other opportunities," says Toews. "We hope to grow into something much much larger."

The best part is, it's a labour of love. —

"We both really enjoy what we're doing. We both work 60-70 hours a week, but it doesn't feel like work. And it's unbelievably cool that 60 million distinct people accessed our website last year."

— Jason Toews



Jason Toews of GasBuddy

Photo: Keith Moxley

The Bigger Picture: Enterprise Regions Up and Running

The Regina Regional Economic Development Authority (RREDA) and the Saskatoon Regional Economic Development Authority (SREDA) established in February are among the first entities that will see more funding and expanded services for regional economic development under Saskatchewan's new Enterprise Region (ER) program.

The previous provincial REDA program, with 27 regions, wound down and ceased operations as of March 31, 2009. The new ER program will operate in 13 new regions across the province. The decision to create the new larger regions is based on information about where people live and work, and takes into consideration natural boundaries such as rivers and road patterns.

"With the huge investment coming in to our province, we have decided to reorganize and strengthen the services of regional economic development agencies," Enterprise and Innovation Minister Lyle Stewart said.

"By expanding the coverage of RREDA and SREDA, we want to see these neighbouring towns tap into the economic development expertise that were being successfully implemented in Regina and Saskatoon."

The new ER program will focus strongly on sustainable economic growth by

supporting regional business and industries and creating competitive advantages at the regional, national and international level. Each Region will work with Enterprise Saskatchewan to ensure the highest level of communication, collaboration and project management in order to accomplish four goals: building regional economies; fostering a culture of enterprise and innovation; building on competitive advantages; and engaging leadership and effective regional governance.

RREDA and SREDA

Under the ER program, RREDA has received \$208,334 in funding (which is a pro-rated amount for the balance of this fiscal year). Its new service area is three times larger than the previous region. Apart from Regina, RREDA covers the towns of Strasbourg, Southey, Fort Qu'Appelle, Indian Head, Lumsden, Balgonie, Pilot Butte, White City and communities in between.

"We are very excited about expanding our economic development initiatives within the broader enterprise region," RREDA president and CEO Larry Hiles said.

"By integrating our rural and urban strategies within a larger regional vision, we will strengthen our economy and ensure that the Regina region thrives as a great place to live, work and do business."

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*— RREDA President and CEO
Larry Hiles*

Likewise, SREDA has received \$208,334 in funding (pro-rated for the balance of the fiscal year). Its service area has also been expanded to include the towns of Asquith, Colonsay and Radisson in addition to the City of Saskatoon and 20 of its surrounding rural communities.

"We're very pleased to receive the new funding," SREDA CEO Alan Migneault said.

"This money will enable us to work more closely with Enterprise Saskatchewan and our new rural partners to help them build and grow their economies. Saskatoon has led the country in GDP growth for the past two years and we're projected to stay on top in 2009. We're happy to pass our expertise on to more communities and help them to join in our success." —

Catching the Wave

By Darrell Nookes

With an estimated 30,000 "brownfield" sites in Canada—properties that have been abandoned because of environmental contamination—University of Saskatchewan commerce graduate Patrick Mah is destined to become a very busy entrepreneur.

Mah, who majored in biotechnology, is developing a method of in situ bioremediation that proposes to speed up a natural process for turning contaminated soils back into productive land. His company, New Wave Environmental Technologies Limited, is preparing to commercialize the process.

The standard means of dealing with brownfield sites today is referred to as "dig and dump", says Mah.

"It's just as it sounds...You dig the contaminated soil up and haul it away to a landfill."

It doesn't address the real problem. It's more of a displacement of liability, in essence, he says. It's expensive, but it's the fastest viable solution for the majority of sites.

Bioremediation occurs naturally when microbes in the soil "consume" the contaminants, Mah explains. The major issue with this process is that the organisms become less productive as the soil conditions become less nutrient rich. Left on its own, the process might take up to 10,000 years.

"Modern science has got it down to about 15 years," Mah says. "What our platform



Patrick Mah of New Wave Environmental Technologies Ltd.

technology proposes to do is speed it up to a two- to three-years time frame. It makes cleaning it up much more economically viable."

Mah says his platform technology is a proprietary blend of "natural" organic substances combined with several delivery mechanisms that create an ideal environment for sustained hydrocarbon degradation activities.

Saskatchewan is a very difficult case, he says.

"We're dealing with hard clays and cold climates," he says. "It's a matter of using the right technologies in combination... the right delivery mechanisms, the right delivery mediums, the right monitoring regimens. Each remedial solution is uniquely tailored to the specific location, as no two sites are quite the same."

"Our main objective is to create that sustained remedial environment."

In January, Mah was selected as a co-winner of the University of Saskatchewan's "Bio-Venture Business Planning Challenge. A \$50,000 grand prize, supplied by Saskatchewan Agriculture and Food, provides startup capital for the winning business proposal.

"Believe me, I haven't done this alone," Mah says emphatically, crediting his father (Wally), Doug Durrant, Roger Wong and organizations including North Ridge Development, Stantec, The Edwards School of Business and the National Research Council for acting as mentors throughout the entire process. *—K*

OVER THE HORIZON

"Normally, 'hot spot' isn't the first phrase that comes to mind when talking about Saskatchewan, Canada. But with most of Canada suffering from devastating job losses, this cold province is becoming exactly that. It's an asterisk to the entire country when it comes to the economic climate..."

— CNN Online, March 09

Less Waste, Cleaner Fuel, Great Idea

By Darrell Noakes

Saskatoon and Regina collectively produce enough used vegetable oil in a year to nearly fill an Olympic sized swimming pool—two million litres. Karthikeyan Narayanan and Zafer Dallal Bashi, PhD students in food and bio-product sciences at the University of Saskatchewan, have set up Eco Oil, a business that utilizes this waste oil as a feed stock for biodiesel.

In itself, biodiesel isn't revolutionary, but the researchers have developed means to convert used vegetable oil more efficiently than current processes and without any hazardous wastes.

"What we are looking into is the use of non-food grade sources of oil in order to produce bio-diesel, so we don't have to compete with food sources," says Bashi, who is completing his PhD in Food and Bio-products science.

"We looked into a new technology that is currently under development in the department of chemical engineering, which is able to convert oils with higher levels of free fatty acids (FFAs) into biodiesel."

"We saw huge potential in alternative sources of oil," says Narayanan, working towards a PhD in Food and Bio-products science. "Our focus is mainly to look at alternative feed stocks, since current feed stocks have less than two per cent of FFAs."

Cooking increases FFAs in oil. These fats contribute to type-two diabetes and cardiovascular disease; therefore they make a productive source for biodiesel. Oil that

goes into deep fryers at about one to two per cent FFAs comes out at close to 11 per cent. The FFAs are converted to biodiesel through a process known as esterification. Technically, biodiesel is a fatty acid methyl ester, a flammable compound that mixes well with petroleum diesel.

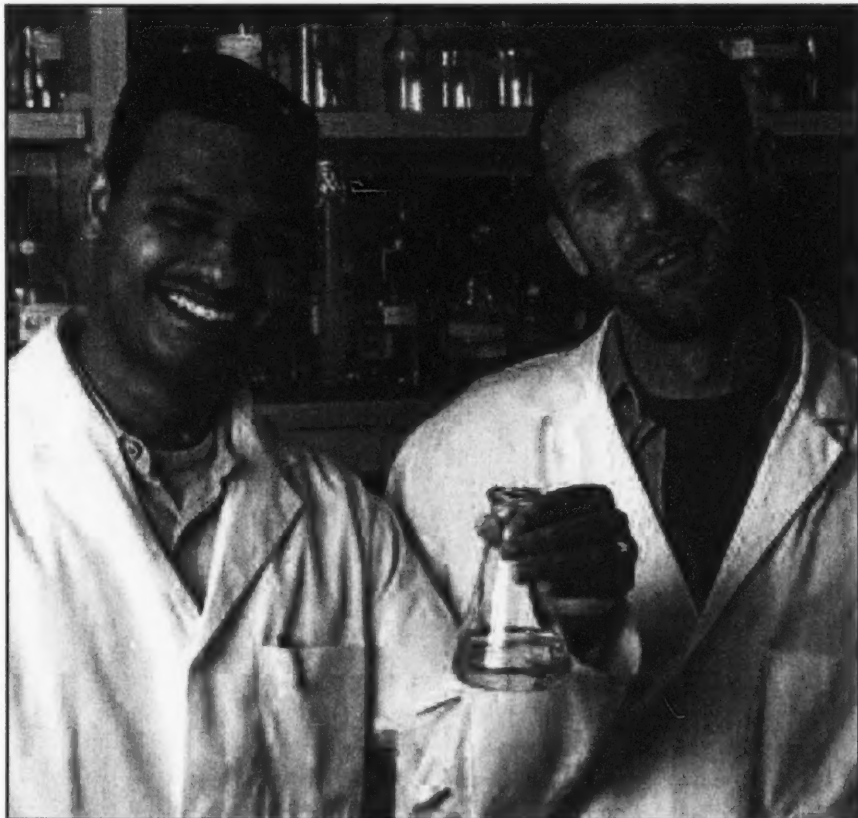
Eco Oil's method reduces cost by eliminating the need to wash the end product to meets standards for use in engines, says Bashi.

"It has an added advantage in the environmental point of view as well,

because there is no toxic waste," says Narayanan.

"It allows recycling the chemicals, so instead of going to waste you can recycle that and take it back through the process again," Bashi adds.

In January, Narayanan's and Bashi's concept was selected as a co-winner of the University of Saskatchewan's Bio-Venture Business Planning Challenge. A \$50,000 grand prize, supplied by Saskatchewan Agriculture and Food, provides start-up capital for the winning business proposal.



Karthikeyan Narayanan and Zafer Dallal Bashi of Eco-Oil

Photo By Darrell Noakes

Let the Sun Shine In

By Elaine Carlson

Allan Finney wants to help people use less fossil fuel.

His Regina-based company, Envron Environmental, has just perfected a direct-to-air solar heater that will not only heat as much as 1000 square feet to comfortable room temperatures on a sunny winter day, but that is also affordable for residential users.

"The HeatWave Solar Heater is a two by one meter panel that is easily installed on a south-facing wall. When the sun shines, a low-maintenance fan captures the heat and circulates it directly into your building, just

like a forced-air furnace, except that you're using the free heat of the sun rather than natural gas or other fossil fuel," explains Finney.

"The drawback to earlier solar heating systems is that they required high-investment and high-maintenance features without a realistic payback. Our system is easy to install and is virtually maintenance free. It also has a payback that compares favourably with switching from a 60-per-cent-efficient gas furnace to a high-efficiency model. If you use energy other than natural gas, as many rural customers do, the payback is considerably shorter. It's also an ideal supplementary heating system for commercial buildings because it provides heat during the day when people are working."

When the first prototype was installed on Envron Environmental's premises, Finney admits to being skeptical. "But when I saw that we could heat my front office area (approximately 1,000 sq. ft) with a single unit, I was so amazed that I installed one on my home. It now heats two-thirds of my whole house on a sunny day."

The HeatWave Solar Heater is attracting a lot of interest. "Our website, www.heatwavesolar.com, has lots of activity," says Finney. "We're also getting about 40 hits a day on a YouTube installation video [see: youtube.com/watch?v=xvlaCsJ6lgI]." Envron Environmental hopes to soon be working with plumbing and heating wholesalers, major retail outlets, home building centres, and environmental organizations to market the units.

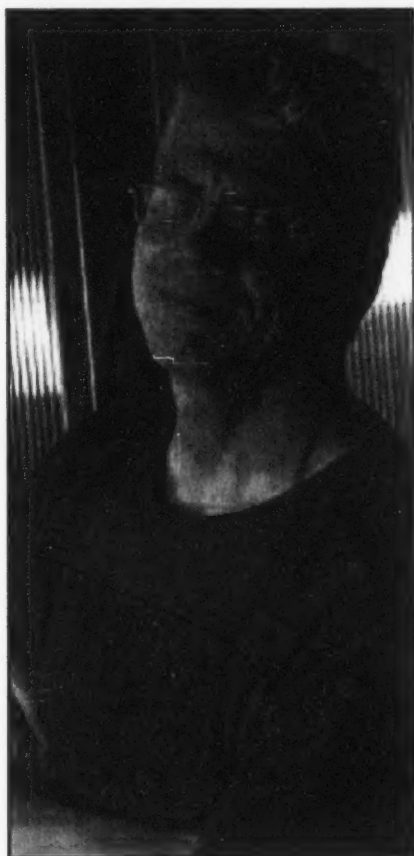
Finney is committed to going green. "We all need to make intelligent choices, and one is to lower dependence on fossil fuels. Until now, there haven't been products on the market to help consumers switch to solar. We're trying to change that." Envron Environmental is also currently working with the Natural Research Council and Communities of Tomorrow on a prototype of a residential grey-water recovery system that has the potential to help alleviate water shortages looming in many areas of the globe.

As Finney says, "We're proud to be doing our part." —

OVER THE HORIZON

"The world recession has so far stopped short of Saskatchewan, the cold Canadian province that has historically repelled prosperity and young people... its economy is set to grow, while much of the rest of Canada faces painful declines."

— Reuters, March 2009



All Finney of ENVIRON Environmental

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by the needs of these member retailers."

In fact, Van Iderstine points to the success of western Canada's Co-operative Retailing System as the driving force behind this, and all CCRL's previous expansions.

"There is a growing demand for petroleum fuel because of the growth in the System. We are expanding to meet that need."

CCRL has an impressive history of consistent growth. It was created in 1935 to provide high-quality petroleum products to co-op retail outlets, with an initial capacity of only 500 barrels per day.

Van Iderstine bases the growth and development on the unique co-operative structure in which the refinery operates.

"CCRL is owned by Federated Co-operatives Ltd, which is owned by our

retail co-operatives, which are owned by their individual co-op members. The benefit of this structure is that profits are returned to retailers, and then are reinvested back into facilities or returned to members."

The expansion is extremely good news for both the city and the province. Approximately 3,000 person years of engineering and construction work, including up to 1,600 jobs at the peak in 2011, are expected to be created. The construction phase is underway and will wrap up in the fall of 2012.

When finished, the Refinery will grow by an additional 90 to 100 jobs or approximately 20 per cent of its current workforce.

While it will create significant economic benefits, the expansion will also be done

safely. The #1 core principle of the organization is safety of the public and site personnel.

"Safety trumps everything. Nothing proceeds if safety is a significant risk issue," said Van Iderstine.

Despite the challenging fiscal climate, CCRL is well positioned for this project. Funding for the expansion will come entirely from operating profits, eliminating any need for debt financing. Van Iderstine said the project is very exciting for all involved.

"We're having the time of our lives. It's a lot of work, but it is very rewarding to the staff. There is a tremendous amount of pride and passion throughout our facility for this project and the work we are doing within the Co-operative Retailing System."

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